

# *Coleophora paeltsaella* (Lepidoptera: Coleophoridae), a new species of Microlepidoptera described from northern Sweden

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Palmqvist, G. & Hellberg, H.: *Coleophora paeltsaella* (Lepidoptera: Coleophoridae), a new species of Microlepidoptera described from northern Sweden. [*Coleophora paeltsaella* n. sp. (Lepidoptera: Coleophoridae), en ny säckmalart beskriven från norra Sverige.] - Ent. Tidskr. 120 (1-2): 37-42. Lund, Sweden 1999. ISSN 0013-886x.

*Coleophora paeltsaella* n.sp. is described from the fjeld Pältsa situated in the mountainous area in northernmost Sweden. The new species is compared with *Coleophora algidella* Zeller, 1857 and *Coleophora artemisicolella* Bruand, 1855 and seems most closely related to the last mentioned species. The foodplant is unknown.

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## Introduction

In 1990 the authors visited the mountainous region of Duoibal and Pältsa in northernmost Sweden. In this area with its interesting Lepidopterous fauna, (see Elmquist et al 1994) two *Coleophora* females were caught which differed from the known species. At first we thought that the species was *Coleophora algidella*, Zeller 1857, primarily known from adjacent districts in Norway (Opheim & Fjeldså 1980). An examination of the genitalia, however, showed similarities with *Coleophora artemisicolella*, Bruand 1855, which is distributed in the south of Sweden (Svensson et al. 1994). Consultations with Ingvar Svensson and Giorgio Baldizzone confirmed that the species was undescribed. Additional material was collected in 1996 and 1998, giving another five males and one female.

Though this area is type locality for three *Coleophora* species; viz. *C. unigenella* Svensson, 1966, *C. thulea* Johansson, 1967 and *C. svenssoni* Baldizzone, 1985, we were pleasantly surprised to find another new *Coleophora* species

there. The distribution of the new species, *Coleophora paeltsaella*, is restricted only to the Pältsa region, but it can be assumed that it has a wider northern distribution.

## *Coleophora paeltsaella* n. sp.

Type locality: Sweden, Torne lappmark, Pältsa (Fig.1).

Type material: Holotype: 1 male labelled: SUECIA, To., 30.VI.1998, Pältsa, 800-1000 m, RN 1678/7662, G. Palmqvist- Genitalpreparat [Genitalia mounted on slide] 2210 A, Göran Palmqvist, *Coleophora paeltsaella* Palmqvist & Hellberg, Holotypus, *Coleophora paeltsaella* Palmqvist & Hellberg (red label), in the Museum of Natural History in Stockholm. Paratypes: (Paratypus, red label): To., Pältsa, Pältsans SV-sluttning 800-1100 m, RN 1677-78/7662, 3.VII.1996 B. Pettersson- Genitalpreparat [Genitalia mounted on slide] 928, Bert Pettersson, *C. paeltsaella*



Fig. 1. The steep S-slopes of Pältsa, about 1000 m (view towards east), type locality for *Coleophora paeltsaella* n. sp. Photo H. Hellberg.

Den branta sydslutningen på Pältsa, typlokalen för *Coleophora paeltsaella* n.sp.

Palmqvist & Hellberg, female, in coll. B. Pettersson; SUECIA, To., 1.VII.1990, Pältsa, RN c:a 1678/7662, G. Palmqvist- Genitalpreparat [Genitalia mounted on slide] 1710, Göran Palmqvist, *C. paeltsaella* Palmqvist & Hellberg, female, in coll. G. Palmqvist; SUECIA, To., 5.VII.1990, Pältsa, H. Hellberg- Genitalpreparat [Genitalia mounted on slide] 2425, Hans Hellberg, *C. paeltsaella* Palmqvist & Hellberg, female, in coll. H. Hellberg; To., Pältsa, Pältsans SV- sluttning, RN 1677-78/7662, 3.VII.1996. Bert Pettersson- Genitalpreparat [Genitalia mounted on slide] 927, *C. paeltsaella* Palmqvist & Hellberg, male, in coll. B. Pettersson; SUECIA, To., 30.VI.1998, Pältsa, 800-1000 m, RN1678/7662, G. Palmqvist- Genitalpreparat [Genitalia mounted on slide] 2207, *C. paeltsaella* Palmqvist & Hellberg, male, in coll. G. Palmqvist; SUECIA, To., 30.VI.1998, Pältsa, 800-1000 m, RN 1678/7662, G. Palmqvist, *C.*

*paeltsaella* Palmqvist & Hellberg, male, in coll. G. Palmqvist; SUECIA, To., 30.VI.1998, Pältsa, 800-1000 m, RN 1678/7662, H. Elmquist, *C. paeltsaella* Palmqvist & Hellberg, male, in coll. H. Elmquist.

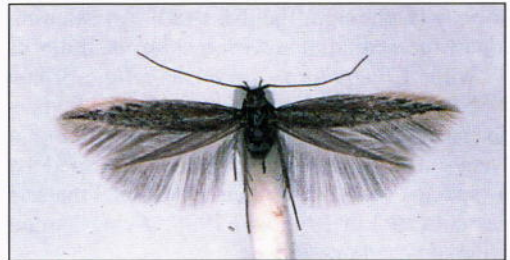


Fig. 2. *Coleophora paeltsaella* n. sp. male, holotype (SUECIA To Pältsa, 800-1000 m, 30.VI.1998, genitalia slide 2210 A).

*Coleophora paeltsaella* n. sp. hane, holotyp.



Fig. 3-8. *Coleophora*, habitus. - Left 3-4. *Coleophora paeltsella* n. sp. male, holotype (upper), female (lower), SUECIA To, Pältsa, SV-slutning 800-1000 m, 3.VII.1996. - Middle 5-6. *C. algidella* Zeller, 1857 male (upper) ISLAND Skaftafell 26.VI.1951, female (lower) ISLAND Skaftafell 26.VI.1951. - Right 7-8. *C. artemisicolella* Bruand, 1855 male (upper) SUECIA Sk, Benestad e.l. 28.VII.1962, female (lower) SUECIA Sk Åhus 16.VII.1959.

Habitusbilder på *Coleophora*-arter. - Vänster 3-4 *Coleophora paeltsella* n. sp. hane, holotyp (överst), hona (underst). - Mitten 5-6. *C. algidella* hane (överst), hona (underst). - Höger 7-8. *C. artemisicolella* hane (överst), hona (underst).

**Diagnosis:** *C. paeltsella* n. sp. (Fig. 2-4) resembles *C. algidella* Zeller, 1857 and *C. artemisicolella* Bruand, 1855 (Fig. 5-8) but differs habitually; *C. algidella* is more brownish on the forewing and does not have any black scales, the light brownish fringes and the light greyish white costal and discal streaks are more distinct, wingspan on average 14 mm, underside of forewing is brown, antennae brownish; the forewings of *C. artemisicolella* are ochreous to greyish-ochreous with whitish or greyish ochreous lines, labial palps more whitish and antennae whitish grey. The male genitalia differ in the following: the sacculus in *algidella* is wide ending in three processes (like that of *C. striatipennella* Nylander, 1848), in *artemisicolella* the incurved sacculus lacks the distinct margin shown by *paeltsella* and the teeth on the prongs are situated in the middle. The female genitalia of *algidella* show marked lines nearly parallel with the anterior edge of the subgenital plate, the spiculate part of ductus bursae is thin and shorter than the 7th sternite, the posterior edge of the

subgenital plate is not rounded; *artemisicolella* differs from *paeltsella* by the longer subgenital plate medially notched to 1/2 and ductus bursae expanding into the wide introitus vaginae (Fig. 9-14).

**Etymology:** The name refers to the fjeld Pältsa where the species was found.

#### Description:

*Male* (Fig. 2).

Wingspan: 12-13 mm.

Forewings: Scattered with greyish white and brownish scales, the light scales also forming diffuse longitudinal costal and discal streaks; blackish scattered scales especially towards apex; costal fringes light greyish, dorsal fringes more greyish proximally covered with light dorsal wing scales; underside dark grey.

Hindwings: Grey; fringes grey.

Head: Brownish grey, second and terminal segment of palps fuscous covered with greyish scales; antennae mixed with grey and fuscous

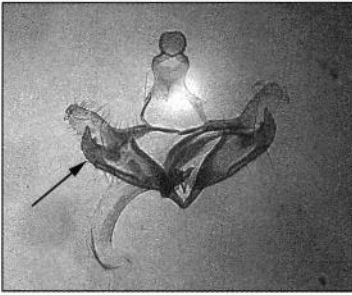


Fig. 9

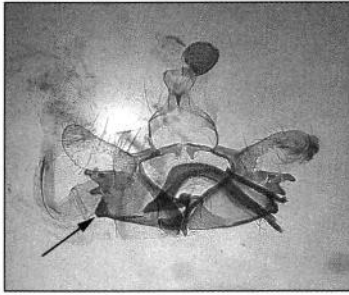


Fig. 11

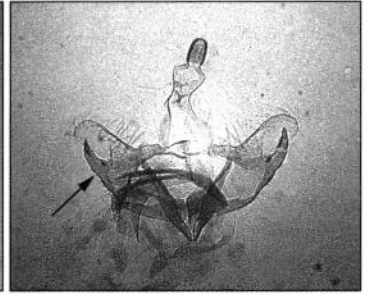


Fig. 13

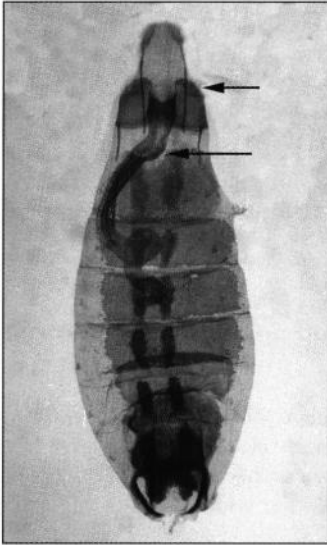


Fig. 10.

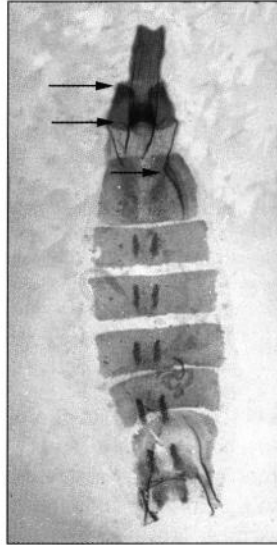


Fig. 12.

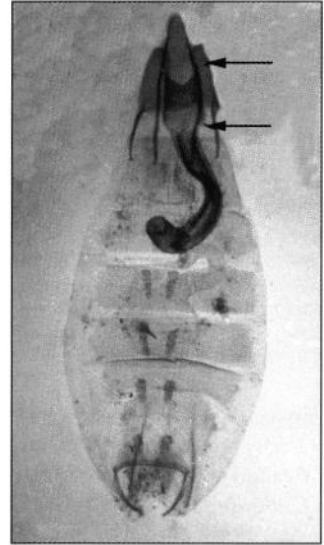


Fig. 14.

Fig. 9- 14. Genitalia of *Coleophora*. - 9. *C. paeltsaella* n. sp. male, holotype (SUECIA To, Pältsa 30.VI.1998, genitalia slide 2210 A). - 10. *C. paeltsaella* n. sp. female, paratype (SUECIA To, Pältsa 3.VII.1996, genitalia slide 928). - 11. *C. algidella* Zeller, 1857 male (ISLAND Skaftafell 26.VI.1951, genitalia slide 2209 A). - 12. *C. algidella* Zeller, 1857 female (ISLAND Skaftafell 26.VI.1951, genitalia slide 2208 A). - 13. *C. artemisicolella* Bruand, 1855 male (SUECIA Sk, Benestad e. l. 28.VII.1962, genitalia slide 3707). - 14. *C. artemisicolella* Bruand, 1855 female (SUECIA Sk, Åhus 16.VII.1959, genitalia slide 2207 A).

Genitalier av *Coleophora*. - 9. *C. paeltsaella* n. sp. hane, holotyp. - 10. *C. paeltsaella* n. sp. hona, paratyp. - 11. *C. algidella* hane. - 12. *C. algidella* hona. - 13. *C. artemisicolella* hane. - 14. *C. artemisicolella* hona.

scales.

Thorax: Brownish grey; tegulae greyish.

Abdomen: Light grey, the last segment brownish grey.

Legs: Fuscous with grey scales; the long-haired tibia of the hindlegs brownish grey.

Genitalia: (Fig. 9). Sacculus incurved with a costal tooth and ending in one small process, margin with one distinct small tooth distally, aedeagus with one tooth near apex of each prong and one tooth in the middle of one of the prongs, 2-3 long cornuti on an elongate plate.



*Female* (Fig. 3).

No obvious difference from male in habitus.

**Genitalia:** (Fig. 10). Outer posterior edge of subgenital plate rounded, medially notched to 1/3, ostium incurved, apophyses anteriores short, apophyses posteriores relatively short about twice the subgenital plate, papillae anales elongated, ductus bursae widening gradually into a curve at one side and then in the middle narrowing into vaginae, the spiculate part of ductus bursae is longer than the subgenital plate and the rest of ductus bursae is long and coiled, one signum with base plate.

**Biology:** Unknown. The moths were caught on the steep S-SW slopes of the Pältsa massive, in connection with occurrences of flowers of Mountain Avens (*Dryas octopetala*), about 800-1100 meters above sea level. Actually two moths were seen sitting in flowers (B. Pettersson and H. Elmquist, pers.comm.).

**Distribution:** Sweden. Known from the type locality only.

### Discussion

The genitalia of the new species seem closely related to *C. artemisicolella* Bruand, 1855 and according to the group system used by Toll (1953), Patzak (1974) and Razowski (1990) *paeltsaella* should be placed in group 30, by Emmet et al. (1996) called the *alticolella* group.

The finds of *C. paeltsaella* restricted to the fjeld Pältsa perhaps indicate that the species is overlooked because of the early flight period, presumably the first *Coleophora* on wings, and one example of opportunistic early-season flight (see Mikkola 1992).

In 1998 cold weather situations in May and June delayed the summer and the warmth came at midsummer. On the 30 of June we arrived at Pältsa and found 4 males of *C. paeltsaella* and only one further species of *Coleophora* viz. *C. svenssoni* Baldizone, 1985. Because of bad weather conditions it was not possible to make more collections until the 7th of July. No further *C. paeltsaella* was found but now *C. svenssoni*

Baldizone, 1985 and *C. unigenella* Svensson, 1966 were flying (J. Jonasson pers.comm.). The years 1990 and 1996 also were late summers. A more normal summer we believe the flight period is about two weeks earlier. The Mountain Avens (*Dryas octopetala*) seems to be an important nectar resource for the imagines but we do not suppose that it is the foodplant of the larva. Because of the close presumed relationship with *C. artemisicolella* we suspect that the foodplant ought to be searched for in the Asteraceae.

### Acknowledgments

We are indebted to the following persons; Bert Pettersson, Sölvesborg and Håkan Elmquist, Mariefred, Dr Roy Danielsson, Department of Zoology, Lund University and Ole Karsholt, Zoological Museum, University of Copenhagen for loan of specimens, prof. Giorgio Baldizone, Asti and Jan Jonasson, Västra Frölunda for some informations, Ingvar Svensson, Österslöv for valuable informal discussions and comments on the manuscript, Sune Forsberg, Tungalsta for checking the English text and finally Göran Ny-rén, Västerhaninge for helping us with the pictures.

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### Sammanfattning

*Coleophora paeltsaella* n. sp. beskrivs från fjället Pältsa i nordligaste Sverige, som också är den enda kända lokalen för denna art. Utseendemässigt ger fjärilen ett gråaktigt intryck. Framvingarna har gråvita och brunaktiga vingfjäll. Inströdda förekommer också svarta vingfjäll särskilt mot vingspetsen. Ljusare vingfjäll bildar en diffus ljus framvingekant och ett mittgående diffust längsgående streck. Utseendemässigt liknar *C. paeltsaella* både *C. algidella* och *artemiscolella* men skiljer sig i följande karaktärer; *C. algidella* är mer bruntecknad med bruna vingundersidor, hos *paeltsaella* är dessa gråa, även antennerna är bruna hos *algidella* och hos *paeltsaella* gråaktiga; *C. artemiscolella* är ockra till ockragrå tecknad på framvingarna och har vitaktiga antenner. Hangenitalierna visar klara skillnader;

*C. algidella* har bred sacculus som avslutas i tre utskott (påminnande om *C. striatipennella* Nylander, 1848), hos *artemiscolella* saknas kitinlisten hos den inböjda sacculus som *paeltsaella* har. Hongenitalien hos *paeltsaella* saknar den något böjda kitiniserade listen på subgenitalplattan som är så tydlig hos *algidella*. Gentemot *artemiscolella* skiljer sig *paeltsaella* genom att ostium inte är lika långt inböjt och brett och att introitus vaginae vid övergången från ductus bursae vidgar sig i en utbuktning på ena sidan för att sedan i mitten smalna av. Fjärilarna är funna genom skraphävning på fjället Pältsans S-SV- sluttningar c:a 800-1100 m ö h, i anslutning till förekomster av fjällsippa. Två av exemplaren har hittats sittande i blommor av fjällsippan, förmodligen under nektarsök. Vi tror dock inte att fjällsippan är värdväxt. Antagligen har arten en större nordlig utbredning men kan vara förbisedd på den tidiga flygtiden som normalt torde ligga i mitten av juni. De kända exemplaren är funna kring månadsskiftet juni- juli men fynden är gjorda vädermässigt försenade år till följd av kyliga och regniga vår-försomrar. Som svenskt namn har tidigare föreslagits *Pältsasäckmal* (Svensson 1991).

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## Errata - tryckfel

In the article "First record of *Setodes punctatus* (Trichoptera: Leptoceridae) in NW Europe" by P. Wiberg-Larsen et al., published in Ent. Tidskr. 119 (1) 1998 the units of measurement given for Total phosphorus and Total nitrogen in Table 1. (page 38) are incorrect. The unit of measurement in both cases should be ( $\mu\text{g/l}$ ), not ( $\text{mg/l}$ ).

I artikeln "First record of *Setodes punctatus* (Trichoptera: Leptoceridae) in NW Europe" av P. Wiberg-Larsen et al., som finns med i Ent. Tidskr. 119 (1) 1998 har måttenheterna för total mängd fosfor och kväve (Total phosphorus och Total nitrogen) i tabell 1 (sidan 38) blivit fel. Måttenheten skall i båda fallen vara ( $\mu\text{g/l}$ ), inte ( $\text{mg/l}$ ).